

REMARKS

Claims 1-18 are pending in the application after this amendment adds new claims 14-18. Claim 1 has been amended. The new claims and amendment to claim 1 find support throughout the specification and figures and do not add new matter.

Claims 1-4, 6, 7, and 11-13 are rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent Application Publication No. 2002/0115252 A1 to Haukka et al. (hereinafter Haukka). The Examiner asserts that all of the features of claim 1 are disclosed in Haukka.

Amended claim 1 recites a method for forming a semiconductor device including the step of depositing a monoatomic film including a metal on a base by using a metal source including a compound containing the metal and no oxygen. The method of claim 1 also includes the step of depositing a metal oxide film including oxide of the metal on the monoatomic film by using a CVD technique.

The Examiner asserts that these features are disclosed in Haukka. However, there is no disclosure in Haukka of depositing a metal oxide **of the metal in the monoatomic film** by a CVD technique. As described in the specification of the present invention as regards the first embodiment (Specification; page 8, line 24 et. seq.), tantalum is first deposited in a monoatomic film (Specification; page 10, line 25 to page 11, line 12), and then deposited as an oxide in a CVD process. (Specification; page 11, lines 13-23). Similarly, the second and third embodiments discussed in the specification describe the use of tantalum as both the metal in the monoatomic film and the metal in the CVD deposited oxide, though other metals may also be used. (Specification; page 16, lines 3-14). However, in all cases, the monoatomic layer (also described as the seed

layer) is formed of **the same metal that is later deposited** as an oxide in the CVD process. This distinction is important since one of the purposes of the present invention is to provide a metal oxide film. (Specification; page 1, lines 4-5).

In contrast, Haukka apparently provides an atomic layer deposition of a compound including aluminum (Haukka; paragraphs 61 and 69), and an oxide layer including zirconium. Haukka specifically discloses “an interface layer between two or more materials.” (Haukka; abstract). Haukka does not disclose, or even suggest, depositing a monoatomic layer of a metal and a subsequent deposition of an oxide of **the same metal** in a CVD process, as recited in claim 1. Therefore, Haukka does not anticipate the subject matter of claim 1.

Claims 2-4, 6, 7, and 11-13 depend from claim 1 and are therefore allowable for at least the same reasons as claim 1 is allowable.

Additionally, regarding claim 3, which recites that the oxidizing gas includes heated H₂O, it is respectfully submitted that Haukka does not disclose, or even suggest, this feature. Therefore, for at least this additional reason claim 3 is allowable over the reference.

It is therefore respectfully requested the rejection be withdrawn and claims 1-4, 6, 7, and 11-13 be placed in condition for allowance.

Claim 5 was rejected under 35 U.S.C. §103(a) as being unpatentable over Haukka in view of U.S. Patent Application Publication No. 2005/0009335 A1 to Dean et al. (hereinafter Dean). The Examiner asserts that the feature of claim 5, of performing, before the monoatomic film depositing step, a step of supplying hydrofluoric acid onto a surface of the base, is disclosed in Dean.

Claim 5 depends from claim 1 and is therefore allowable for at least the same reasons as claim 1 is allowable.

Claims 8-10 were rejected under 35 U.S.C. §103(a) as being unpatentable over Haukka in view of U.S. Patent Application Publication No. 2003/0207593 A1 to Derderian et al. (hereinafter Derderian). The Examiner asserts that the features of claims 8-10 are disclosed in Derderian.

Claims 8-10 depend from claim 1 and are therefore allowable for at least the same reasons as claim 1 is allowable.

New claim 14 recites a method for forming a semiconductor device that includes depositing a monoatomic film including a metal on a base in an oxygen-free environment and depositing a metal oxide film including an oxide of the metal on the monoatomic film using a CVD technique. Since claim 14 includes the deposition of a metal in a monoatomic layer and a deposition of the same metal in an oxide in a CVD process, claim 14 is allowable over the cited references for at least the same reasons as claim 1 is allowable.

Claims 15 and 16 depend from claim 14 and are therefore allowable for at least the same reasons as claim 14 is allowable.

New claim 17 recites a semiconductor device formed by a method. The method includes depositing a monoatomic film including a metal on a base in an oxygen-free environment and depositing a metal oxide film including an oxide of the metal on the monoatomic film using a CVD technique. Since claim 17 includes the deposition of a metal in a monoatomic layer and a deposition of the same metal in an oxide in a CVD

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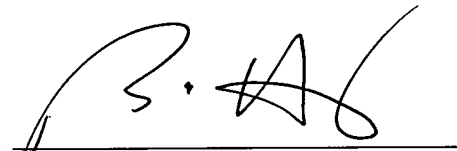
process, claim 17 is allowable over the cited references for at least the same reasons as claim 1 is allowable.

Claim 18 depends from claim 17 and is therefore allowable for at least the same reasons as claim 14 is allowable.

In view of the remarks set forth above, Applicants respectfully submit that the present application is in condition for allowance. However, if for any reason the Examiner should consider this application not to be in condition for allowance, the Examiner is respectfully requested to telephone the undersigned attorney at the number listed below prior to issuing a further Action.

Any fee due with this paper may be charged to Deposit Account No. 50-1290.

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'B. Hennessey', is written over a horizontal line.

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